

IN THE CLAIMS:

1. (previously presented) A method for receiving of Motion Picture Experts Group 4 (MPEG-4) data resources broadcast in a European Digital Video Broadcasting (DVB) network, the method comprising:

at a DVB-Multimedia Home Platform (MHP) terminal, receiving a Motion Picture Experts Group 2 (MPEG-2) Transport Stream (TS) with hierarchical structure MPEG-4 resources, packetized in a Digital Storage Media Command and Control (DSM-CC) User-to-User (U-U) Object Carousel (OC);

locating a universal resources identifier (URI) in the TS;
in response to the URI, accessing a local identifier (lid) address embedded in an Initial Object Descriptor (IOD) providing a binding name and access scheme to the objects in the DSM-CC U-U OC, to locate resources in an MHP Object Carousel (OC) selected from the group including a BIFS scene description stream and an object descriptor stream;

in response to accessing the address, retrieving MPEG-4 resources from the DSM-CC U-U OC; and,
decoding the MPEG-4 resources.

2-5. canceled

6. (previously presented) The method of claim 1 wherein forming a hierarchical directory structure includes forming a hierarchical directory structure of BIOP objects including a DSM::ServiceGateway, a DSM::Directory, DSM::Stream, and a DSM::File.

7. (original) The method of claim 6 wherein retrieving MPEG-4 resources from the MHP OC, in response to accessing the address, includes:

- locating a DSI message;
- extracting the IOR for the Service Gateway;
- parsing the Service Gateway object;
- extracting IORs for Directory, Stream, and File objects from the Service Gateway binding structure; and,
- acquiring MPEG-4 resources from the Stream and File objects.

8. (previously presented) The method of claim 1 wherein receiving an MPEG-2 TS, with a packetized MHP OC, includes receiving a first MPEG-2 TS and a second MPEG-2 TS with a packetized MHP OC;

- wherein locating a URI in the TS includes retrieving a lid URI in the first MPEG-2 TS; and,

- wherein retrieving MPEG-4 resources from the MHP OC, in response to accessing the lid URI, includes retrieving MPEG-4 resources from the second MPEG-2 TS MHP OC.

9. (original) The method of claim 1 wherein retrieving MPEG-4 resources from MHP OC, in response to accessing the address, includes retrieving MPEG-4 resources selected from the group including audio, video, and systems data.

10. (original) The method of claim 9 wherein decoding the MPEG-4 resources includes an action selected from the group including enhancing audio data in the MPEG-2 TS, enhancing video data in the MPEG-2 TS, and using the systems data to establish an interactive audiovisual scene and communication link.

11. (original) The method of claim 10 further comprising:

establishing an interactive audiovisual scene and communication link in response to decoding MPEG-4 systems data.

12. (original) The method of claim 1 further comprising:

caching the retrieved MPEG-4 resources.

13. (previously presented) The method of claim 1 wherein accessing an address in response to the URI includes additionally accessing an address selected from the group including a local cache address and a Web protocol identifier; and,

the method further comprising:

retrieving MPEG-4 resources, in response to accessing the address, from a source selected from the group including a local cache and a website.

14. (previously presented) A method for broadcasting pointers to Motion Picture Experts Group 4 (MPEG-4) data in a European Digital Video Broadcasting (DVB) network, the method comprising:

embedding hierarchical structure MPEG-4 resources in a Digital Storage Media Command and Control (DSM-CC) User-to-User (U-U) Object Carousel (OC);

packetizing the DSM-CC U-U OC in an Motion Picture Experts Groups 2 (MPEG-2) transport stream (TS);

generating a local identifier (lid) universal resource identifier (URI) embedded in an Initial Object Descriptor (IOD) supplying a binding name and access scheme to objects in the DSM-CC U-U OC for accessing MPEG-4 resources and locating resources in a Multimedia Home Platform Object Carousel (MHP OC) selected from the group including a BIFS scene description stream and an object descriptor stream;

embedding the URI in an MPEG-2 TS; and,

broadcasting the MPEG-2 TS, with the packetized DSM-CC U-U OC.

15-18. canceled

19. (previously presented) The method of claim 14 wherein forming a hierarchical directory structure includes forming a hierarchical directory structure of BIOP objects including a DSM::ServiceGateway, a DSM::Directory, DSM::Stream, and a DSM::File.

20. (original) The method of claim 19 wherein embedding MPEG-4 resources in the MHP OC includes:

loading the MPEG-4 resources into File and Stream objects;
creating IORs for Directory, Stream, and File Objects;
binding the IORs in a Service Gateway;

creating an IOR for the Service Gateway; and,
locating the Service Gateway IOR in a DSI message.

21. (previously presented) The method of claim 14 wherein embedding the URI in an MPEG-2 TS includes locating a lid URI in a first MPEG-2 TS;

wherein packetizing the MHP OC in an MPEG-2 TS includes packetizing the MPEG-4 resources in an MHP OC carried by a second MPEG-2 TS; and,

wherein broadcasting the MPEG-2 TS includes broadcasting the first and second MPEG-2 TSs.

22. (original) The method of claim 14 wherein embedding MPEG-4 resources in an MHP OC includes embedding MPEG-4 resources selected from the group including audio, video, and systems data.

23. (original) The method of claim 22 wherein embedding MPEG-4 resources in an MHP OC includes resources used for a purpose selected from the group including enhanced audio data in the MPEG-2 TS, enhanced video data in the MPEG-2 TS, and systems data for the establishment of an interactive audiovisual scene and communication link.

24. (original) The method of claim 14 further comprising:

generating additional URI addresses selected from the group including http and local (receiver) cache addresses for accessing MPEG-4 resources from a website and a local (receiver) cache, respectively.

25. (previously presented) A European Digital Video Broadcasting (DVB) Multimedia Home Platform (MHP) terminal for receiving broadcast Motion Picture Experts Group 4 (MPEG-4) data resources, the system comprising:

a receiver having an interface for accepting a Motion Picture Experts Group 2 (MPEG-2) transport stream (TS) with an embedded local identifier (lid) uniform resource indicator (URI) and a hierarchical structure MPEG-4 resource packetized Digital Storage Media Command and Control (DSM-CC) User-to-User (U-U) Object Carousel (OC);

an address access unit having an interface to accept the MPEG-2 TS from the receiver, the address access unit locating a lid URI embedded in an Initial Object Descriptor (IOD) of the TS providing a binding name and access scheme to objects in the DSM-CC U-U OC for locating resources in a Multimedia Home Platform Object Carousel (MHP OC) selected from the group including a BIFS scene description stream and an object descriptor stream, accessing an address, and retrieving the MPEG-4 resources; and,

a decoder having an interface connected to the address access unit for receiving the MPEG-4 resources and an interface for supplying decoded MPEG-4 information.

26-29. canceled

30. (previously presented) The system of claim 25 wherein the address access unit forms a hierarchical directory structure of BIOP objects including a DSM::ServiceGateway, a DSM::Directory, a DSM::Stream, and a DSM::File.

31. (original) The system of claim 30 wherein the address access unit retrieves MPEG-4 resources from the MHP OC as follows:

- locating a DSI message;
- extracting the IOR for the Service Gateway;
- parsing the Service Gateway object;
- extracting IORs for Directory, Stream, and File objects from the Service Gateway binding structure; and,
- acquiring MPEG-4 resources from the Stream and File objects.

32. (previously presented) The system of claim 25 wherein the receiver receives a first MPEG-2 TS and a second MPEG-2 TS with a packetized MHP OC;

wherein the address access unit retrieves the lid URI from the first MPEG-2 TS, and retrieves MPEG-4 resources from the MHP OC in the second MPEG-2 TS.

33. (original) The system of claim 25 wherein the address access unit retrieves MPEG-4 resources selected from the group including audio, video, and systems data.

34. (previously presented) The system of claim 33 wherein the decoder supplies MPEG-4 information selected from the group including enhancing audio data in the MPEG-2 TS, enhancing video data in the MPEG-2 TS, and using the systems data to establish an interactive audiovisual scene and communication link.

35. (original) The system of claim 34 further comprising:

a transmitter having a transmit interface; and,
wherein the transmitter and receiver form an interactive audiovisual scene and communication link in response to decoding MPEG-4 systems data.

36. (original) The system of claim 25 further comprising:

a local cache have an interface to receive retrieved MPEG-4 resources for storage.

37. (previously presented) The system of claim 25 wherein the address access unit accesses an address selected from the group including a local cache address and a Web protocol identifier, and retrieves MPEG-4 resources, in response to accessing the address, from a source selected from the group including a local cache and a network-connected website.

38. (previously presented) A European Digital Video Broadcasting (DVB) system for transmitting Motion Picture Experts Group 4 (MPEG-4) resources, the system comprising:

an address pointer unit (APU) having an interface to supply a Motion Picture Experts Group 2 (MPEG-2) transport stream (TS) with local identifier (lid) uniform resource identifiers (URIs) embedded in an Initial Object Descriptor (IOD) to supply a binding name and access scheme to objects for accessing hierarchical structure MPEG-4 resources embedded in a Digital Storage Media Command and Control (DSM-CC) User-to-User (U-U) Object Carousel (OC) and locating resources in a Multimedia Home Platform Object Carousel (MHP OC) selected from the group including a BIFS scene description stream and an object descriptor stream, and to supply the MPEG-2 TS with the packetized DSM-CC U-U OC; and,

a transmitter having an interface to accept the MPEG-2 TS, with the packetized DSM-CC U-U OC from the address pointer unit, and an interface to broadcast the MPEG-2 TS.

39-42. canceled

43. (previously presented) The system of claim 38 wherein the APU forms a hierarchical directory structure of BIOP objects including a DSM::ServiceGateway, a DSM::Directory, a DSM::Stream, and a DSM::File.

44. (original) The system of claim 43 wherein the APU embeds MPEG-4 resources in the MHP OC as follows:

loading the MPEG-4 resources into File and Stream objects;
creating IORs for Directory, Stream, and File Objects;
binding the IORs in a Service Gateway;
creating an IOR for the Service Gateway; and,
locating the Service Gateway IOR in a DSI message.

45. (previously presented) The system of claim 38 wherein the APU locates a lid URI in a first MPEG-2 TS and embeds MPEG-4 resources in an MHP OC packetized in a second MPEG-2 TS; and,

wherein the transmitter broadcasts the first and second MPEG-2 TSs.

46. (original) The system of claim 38 wherein the APU embeds MPEG-4 resources in an MHP OC selected from the group including audio, video, and systems data.

47. (original) The system of claim 38 wherein the APU generates additional URI addresses embedded in the MPEG-2 TS selected from including http and local (receiver) cache addresses for accessing MPEG-4 resources from a website and a local (receiver) cache, respectively.